



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/546,003

08/18/2005

Kikuo Arimoto

276504US0PCT

8652

22850

7590

10/10/2006

C. IRVIN MCCLELLAND
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

TESKIN, FRED M

ART UNIT

PAPER NUMBER

1713

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/546,003

Applicant(s)

ARIMOTO ET AL.

Examiner

Fred M. Teskin

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 20050818; 20051118.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

Art Unit: 1713

The preliminary amendment of August 18, 2005 having been entered, claims 1-7 are currently pending and under examination.

Claim 1 is objected to because of the following informalities: the parentheses before "wherein" and after "different" appear superfluous and should be deleted. Appropriate correction is required.

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 provides the limitation to "the terminal aldehyde group" (see the second and third lines from the end), which lacks precedent (i.e., antecedent basis) in the claim. Appropriate correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6 and 7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over WO 00/71554 ("Grubbs").

Grubbs exemplifies polymers obtained by ring-opening metathesis polymerization (ROMP) of species of the same monomers used to make the instantly claimed polymer, *viz.*, 1-hydroxy-4-cyclooctene and 1-acetoxy-4-cyclooctene; see Grubbs Example 6 and Table 3, third and fourth entries and *cf.* Specification page 10, final full paragraph. The polymers are made using the catalysts of the Grubbs invention (page 21, line 2), all of which are imidazolidine-based metal alkylidene complexes (see, e.g., page 2, lines 5+) -- the same complex used to make the applicants' polymer. Further, the noted cycloolefins are polymerized using monomer : catalyst ratios that equate to amounts of metal alkylidene complex within applicants' preferred range, i.e., 0.00001 to 0.01 mol % (*cf.*, Specification page 22, where amounts outside the stated range are related to molar amounts of terminal aldehyde and acetal groups in excess of the 0.6 mol % upper limit of claim 1).

Grubbs does not hydrogenate the ring-opened polymers of 1-hydroxy-4-cyclooctene and 1-acetoxy-4-cyclooctene and is silent as to molar amounts of terminal aldehyde and acetal groups in the final polymer. However, formula (1) in claim 1 is generic to an *unsaturated* polymer comprised mainly of the depicted structural units and wherein the total molar amounts of terminal aldehyde and acetal groups is 0.6 mol % or smaller.

Because the cited polymers of Grubbs conform to the claimed formula and because ligand structure and amount of the ROMP catalyst appear to determine

Art Unit: 1713

residual levels of terminal aldehyde and acetal groups, these prior art products are reasonably presumed to inherently possess the undisclosed properties of the instantly claimed polymer. When there is sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not. *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grubbs taken in view of US 6203923 to Bansleben et al.

As noted in the preceding rejection, Grubbs does not hydrogenate the described polymers of 1-hydroxy-4-cyclooctene and 1-acetoxy-4-cyclooctene, but does describe hydrogenation of other ROMP products (see Example 8 on p. 22). It is moreover conventional to hydrogenate the unsaturated polymer obtained by subjecting 4-cyclooctene-1-ol to ROMP using a metal alkylidene catalyst as shown in Example 1 of Bansleben et al (see esp. col. 17, lines 34+). Both the fully and partially hydrogenated polymers of Bansleben et al are taught to exhibit enhanced properties which make them useful as in forming packaging materials and articles (col. 5, lines 36-46). Accordingly, one of ordinary skill in the art would have been inclined to subject the unsaturated polymer of Grubbs obtained from the same or similar (hydroxy-protected) cyclic olefin to hydrogenation as per Bansleben et al, in the expectation of obtaining products possessing similar utility in packaging applications.

Thus, the claimed process for producing the polymer of claim 1 would have been obvious to one having ordinary skill in the art at the time of applicants' invention.

Art Unit: 1713


No claims are allowable at this time.

Any inquiry concerning this communication should be directed to Examiner F. M. Teskin whose telephone number is (571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FMTeskin/09-28-06



FRED TESKIN
PRIMARY EXAMINER
1713